

1/7

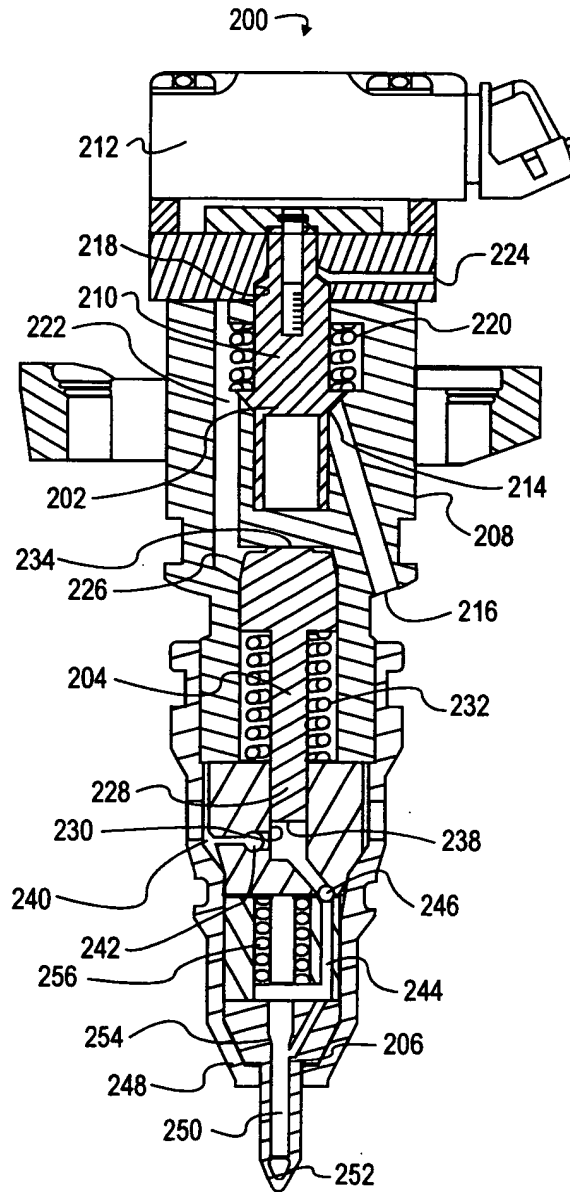


FIG. 1  
PRIOR ART

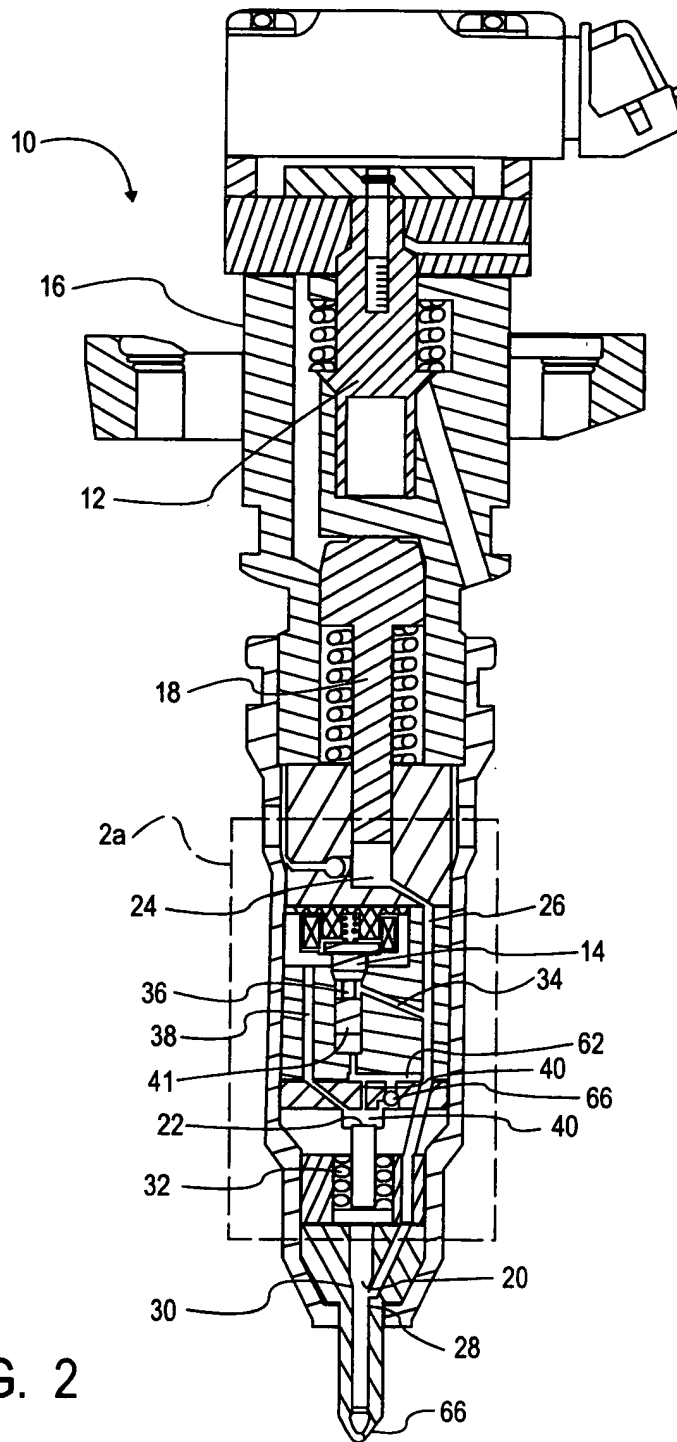


FIG. 2

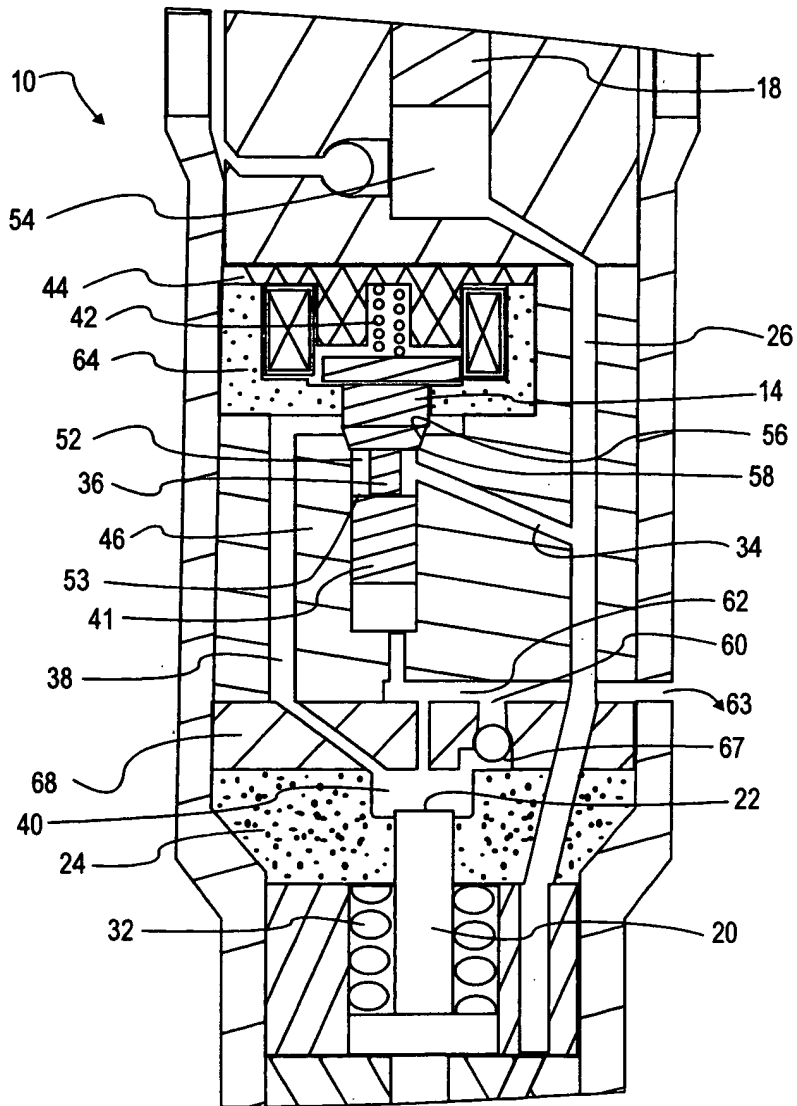


FIG. 2a

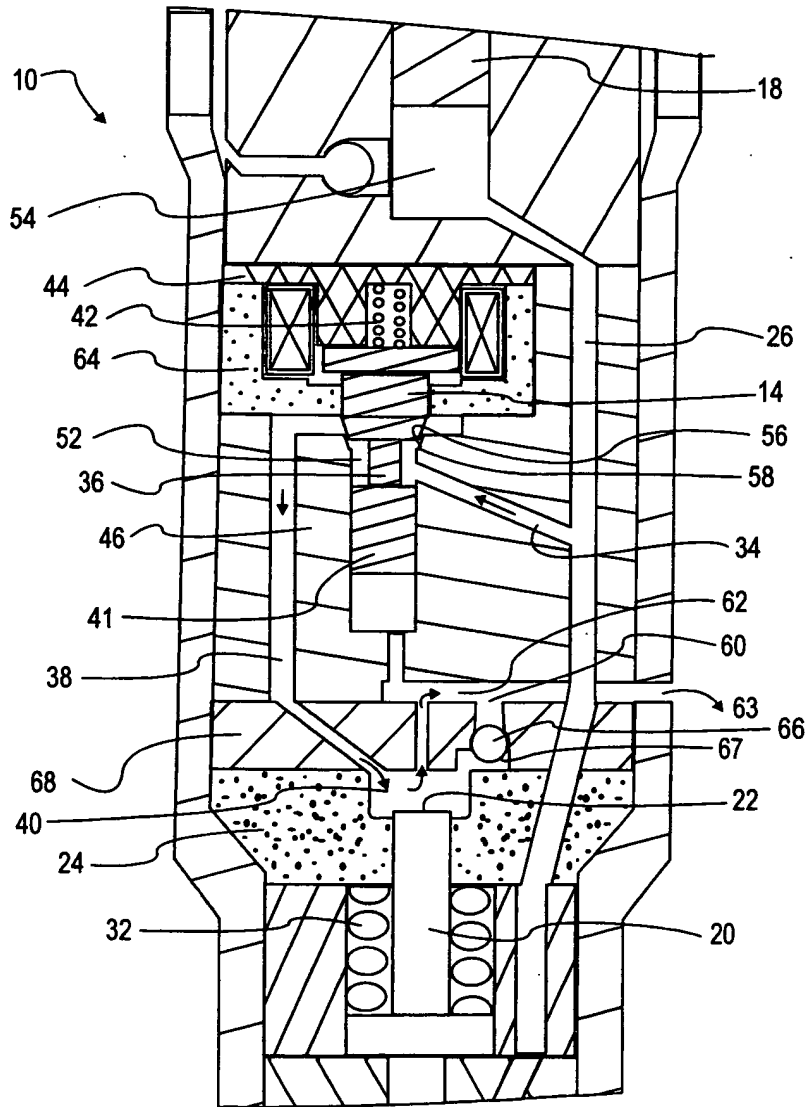


FIG. 2b

FIG. 3

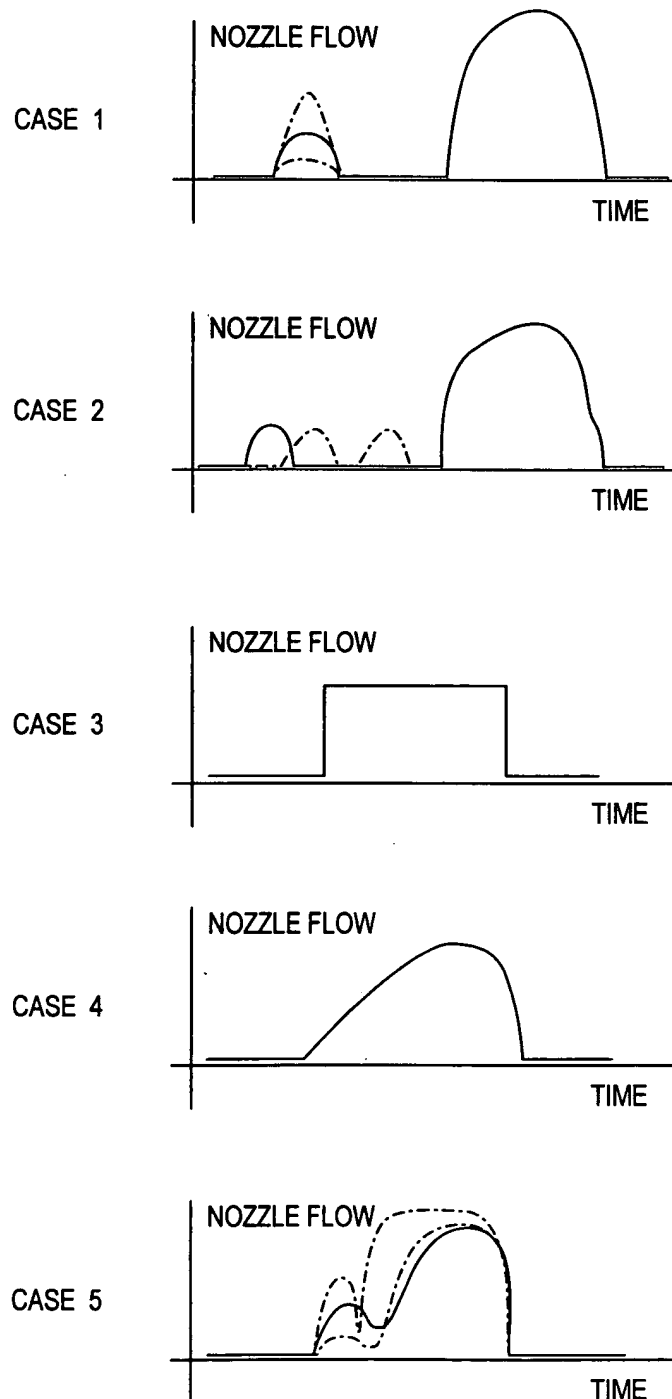


FIG. 5

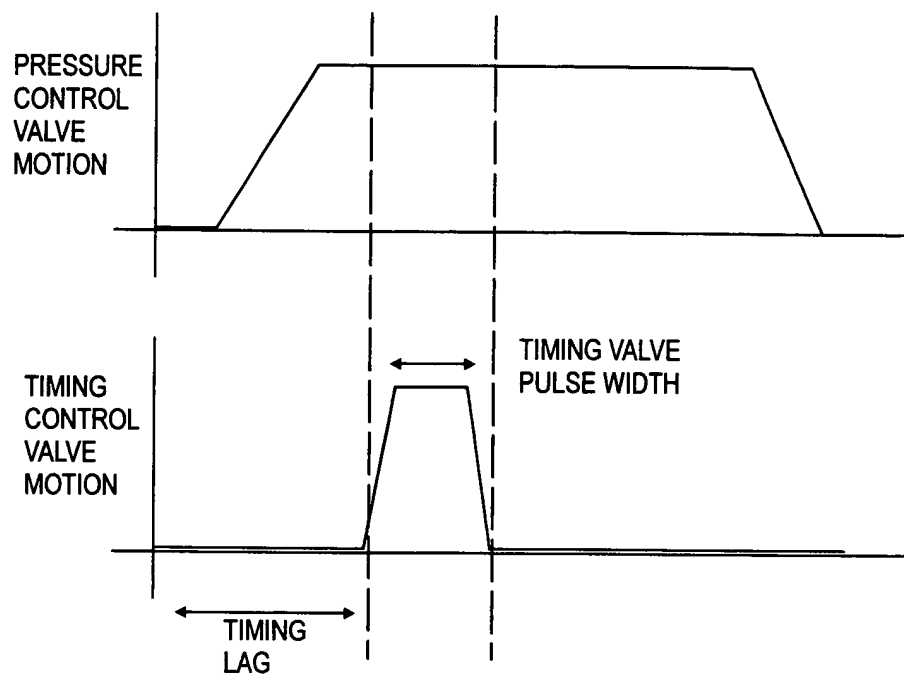
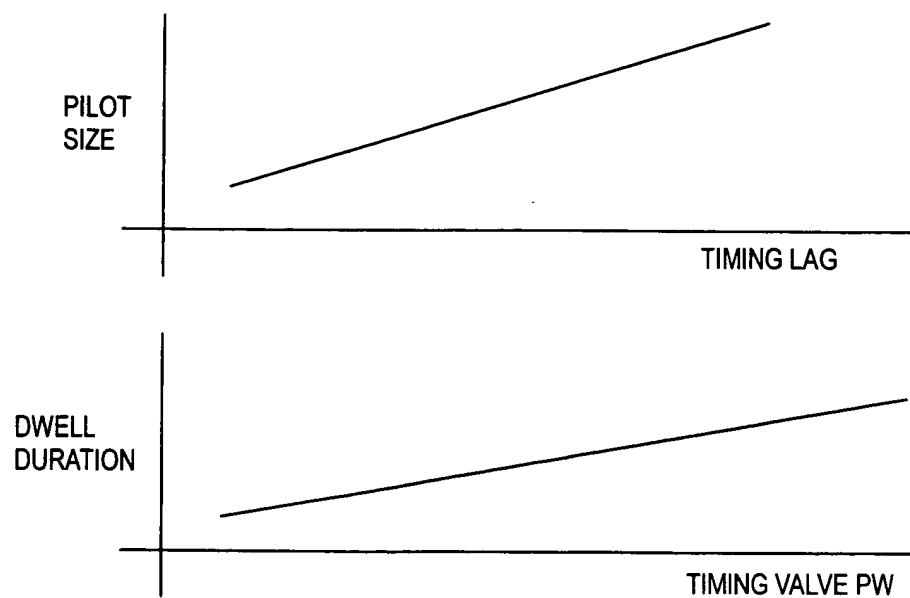


FIG. 6



## Piezo Controlled Direct Needle Actuation

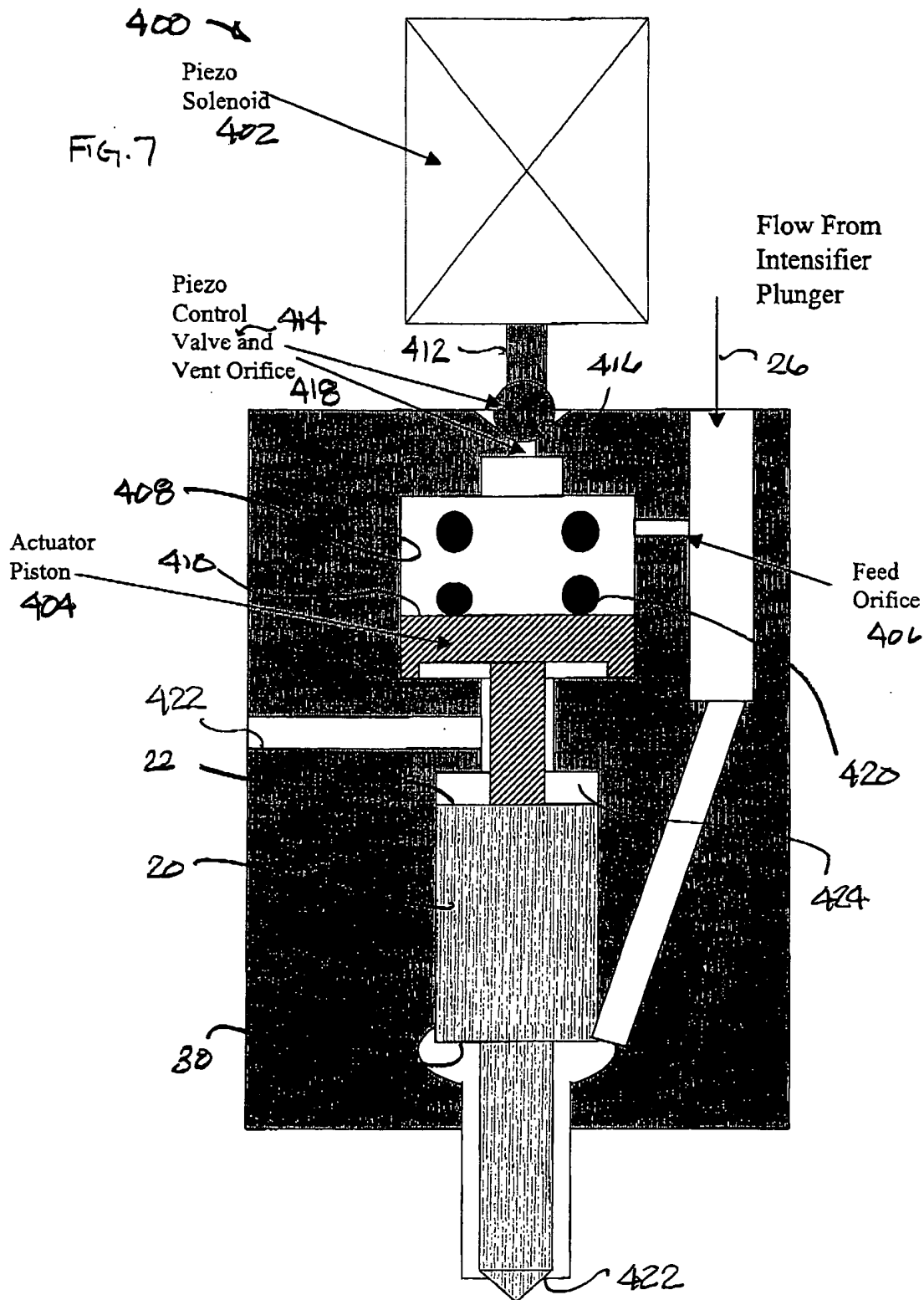
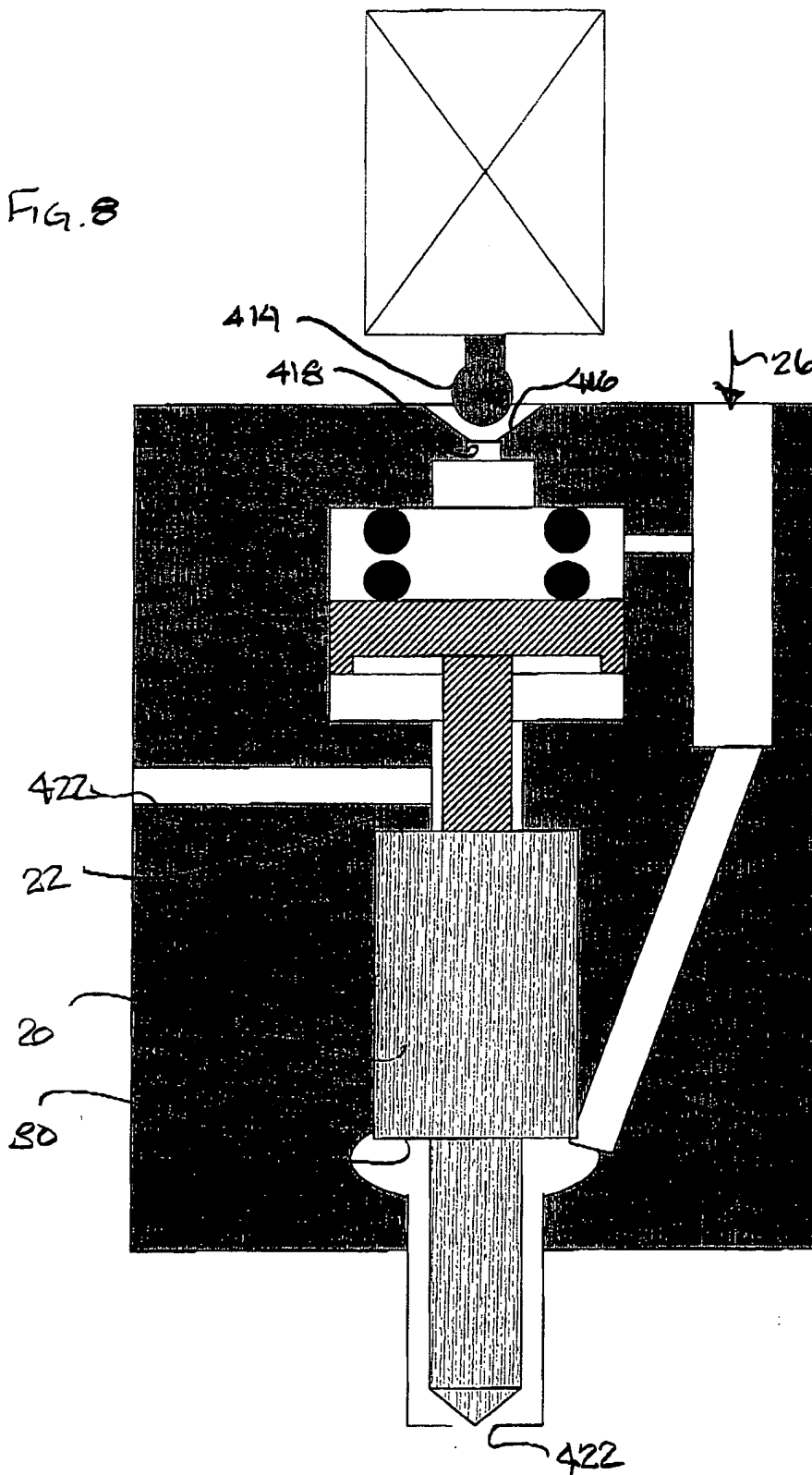


FIG. 8



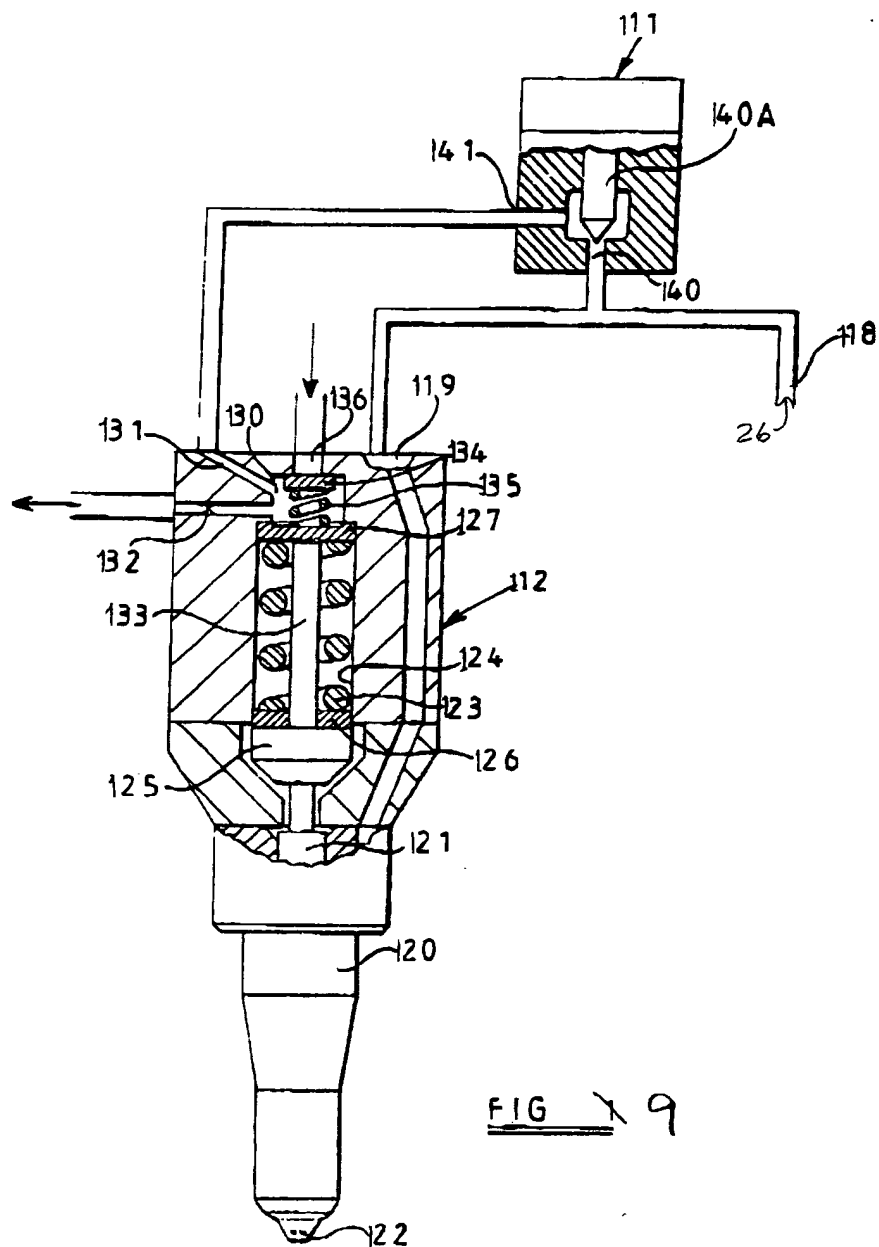


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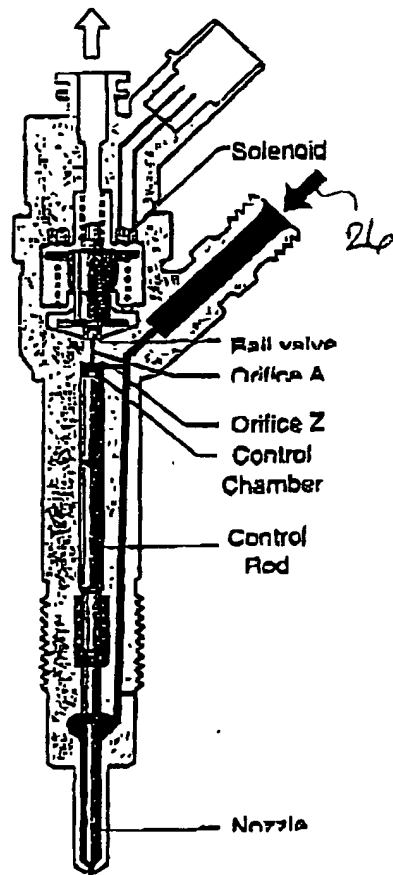


FIG. 10a

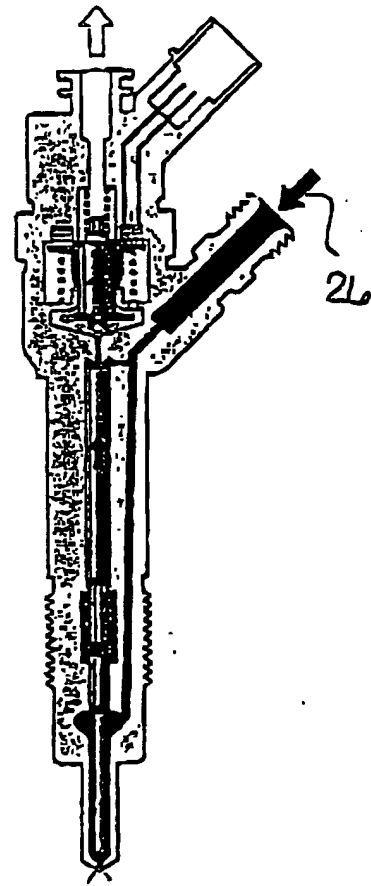


FIG. 10b